Mini data sheet on *Hakea sericea* (Proteaceae)

Added in 2007 – Deleted in 2012

Reasons for deletion:
Hakea sericea was added to the EPPO Alert List in 2007 and transferred to the List of Invasive Alien Plants in 2012.

Why
Hakea sericea (Proteaceae) is a shrub originating from Australia. It has been voluntarily introduced for ornamental purposes, particularly to form protective hedges. The common name for *H. sericea* is "silky hakea" in English, referring to silky hair on the tip growth. Within the EPPO region, the species is recorded in the South of France and in Spain, and is considered invasive in Portugal. Because its distribution is still very limited, this plant can be considered a new emerging invader in Europe. In South Africa, *H. sericea* is highly invasive, *H. gibbosa* and *H. suaveolens* are moderately invasive and *H. salicifolia* is not invasive. Nevetheless, *H. salicifolia* is also considered invasive in Portugal.

Geographical distribution
EPPO Region: France (naturalized), Portugal (invasive), Spain.
Africa: South Africa (invasive).
Oceania: Australia (native - New South Wales, Tasmania, Victoria), New Zealand (invasive).
Note: in France, it is located in the Esterel (Côte d'Azur), preciselly in Théoule-sur Mer, le Trayas, St Raphaël. The plant is known as naturalized in the Esterel since 50 years. In Portugal, the species is present along the coast (Minho, Douro Litoral, Beira Litoral, Estremadura, Ribatejo, Baixo Alentejo, Algarve).

Morphology
Hakea sericea is a highly-branched and very prickly shrub that can reach 5 m in height and forms dense stands. Leaves are rigid, 6 cm long and 1 mm large, and very thorny. Flowers are hermaphrodite, white or pink and are insect pollinated, the perianth is 4-5 cm long, and they bloom from June till September. The fruits are hard and woody capsules, 3 to 4 cm, round, and contain 2 winged seeds.

Biology and Ecology
The plant is drought, wind and cold resistant. It grows in sandstone and shale soils, and is found at elevations of 0 to 1400 m. Fruits accumulate for years on the tree and open only when the plant dies or is burnt. Seeds are prolifically released after fires, leading to dense seedling populations. The seeds are dispersed over long distances by the wind. *H. sericea* is considered highly invasive in South Africa due to its ability to produce a large seed bank in its newly adopted environment in the absence of seed predators.

Habitats
Disturbed areas such as forest margins, coastal grasslands and forests.

Impacts
In the Western and Eastern Cape Provinces of South Africa, the dense and impenetrable thickets are known to severely threaten the unique endemic vegetation of the Cape, to increase fire hazards and to reduce water yields in catchments. Studies on South African fynbos type of vegetation show that invasion by *H. sericea* resulted in a 60 % increase in fuel load and lowered the moisture content of live foliage from 155 to 110 %. Simulated rates of fire spread and intensity were nonetheless lower than in fynbos due to a densely-packed fuel bed.

Control
H. sericea is successfully controlled in South African rangelands by combining mechanical, chemical and biological control methods.

Mechanical control: in fire adapted communities, mechanical control includesfelling the invasive trees and leaving them for 12-18 months until seeds have been released. Burning them subsequently kills seeds and seedlings. This method is efficient but is very time consuming and can have deleterious effects on the native vegetation.
Chemical control: seedlings can be controlled with triclopyr, shrubs with tebuthiuron.
Biological control: In South Africa, different biological control agents have been released and showed good results: *Aphanasium australe* (Coleoptera: Cerambycidae), destroying vegetative parts of the plant; *Erytenna consputa* (Coleoptera: Curculionidae), feeding on seeds; and *Carposina autologa* (Lepidoptera: Carposinidae), also destroying seeds. A gummosis disease caused by the fungus *Colletotrichum gloeosporioides*, which occurs naturally in South Africa, was formulated as a mycoherbicide. The disease kills seedlings as well as mature plants and is a highly effective biological control agent.

Sources

Invasive Alien Species in Portugal. http://www.invasoras.pt
Australian Government. http://www.anbg.gov.au/gnp/gnp3/hakea-sericea.html
Weber E (2003) Invasive plant species of the world – a reference guided to environmental weeds. CABI Publishing. Wallingford, UK, 548 p. p. 189.